

### Abstract

Provided are an anode active material for a lithium secondary battery having high reversible capacity and excellent charge/discharge efficiency, comprising a complex composed of ultra-fine Si phase particles and an oxide surrounding the ultra-fine Si phase particles, and a carbon material; and a method for preparing the same. The present invention also provides a method for preparing an anode active material for a lithium secondary battery comprising producing a complex composed of ultra-fine Si particles and an oxide surrounding the ultra-fine Si particles by mixing a silicon oxide and a material having an absolute value of oxide formation enthalpy ( $\Delta H_{\text{for}}$ ) greater than that of the silicon oxide and negative oxide formation enthalpy by a mechanochemical process or subjecting them to a thermochemical reaction to reduce the silicon oxide; and mixing the Si phase-containing oxide complex and carbon material.